Factors affecting the solubility of a substance

- Type of solute
- Type of solvent (e.g. iodine has higher solubility in alcohol than in water)
- Attraction between solute and solvent molecules. If solute and solvent molecules are attracted to each other, they will dissolve. The degree of attraction determines how soluble they are. (e.g. copper sulphate is more soluble than salt in water)
- Some salt don't dissolve in water: Salt and water molecules are more attracted to themselves than each other.

Factors affecting rate of dissolving/dissolution

- Size of particles – when solid solute dissolves, the action takes place only at the surface of each solid particle. When the total surface area of the solid solute particle is increased, the solute dissolves more rapidly. Breaking a solid solute into smaller pieces increases its total surface area and hence its rate of dissolution.
- Stirring – stirring encourages more and faster encounter between solute and solvent particles.

- Temperature – solute and solvent molecules move more rapidly at a higher temperature and therefore cause more interaction between solute and solvent molecules. Increase in temperature also increase the attraction between solute and solvent molecules.

How distillation works?